



SEQUENCE LISTING

<110> Spyridon Artavanis-Tsakonas
Huilin Qi
Matthew Rand

<120> ACTIVATED FORMS OF NOTCH AND METHODS
BASED THEREON

<130> 7326-132-999

<140> 10/781,059

<141> 2004-02-17

<150> 09/121,457

<151> 1998-07-23

<150> 08/899,232

<151> 1997-07-23

<160> 4

<170> FastSEQ for Windows Version 4.0

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<211> 2471

<212> PRT

<213> Homo sapiens

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Tyr	Glu	Cys	Thr	Cys	Gln	Val	Gly	Phe	Thr	Gly	Lys	Glu	Cys	Gln	Trp
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Gln	His	Gly	Gly	Thr	Cys	Leu	Asn	Leu	Pro	Gly	Ser	Tyr	Gln	Cys	Gln
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Cys	Pro	Gln	Gly	Phe	Thr	Gly	Gln	Tyr	Cys	Asp	Ser	Leu	Tyr	Val	Pro
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Cys	Ala	Pro	Ser	Pro	Cys	Val	Asn	Gly	Gly	Thr	Cys	Arg	Gln	Thr	Gly
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Asp	Phe	Thr	Phe	Glu	Cys	Asn	Cys	Leu	Pro	Gly	Phe	Glu	Gly	Ser	Thr
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Cys	Glu	Arg	Asn	Ile	Asp	Asp	Cys	Pro	Asn	His	Arg	Cys	Gln	Asn	Gly
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Gly	Tyr	Gly	Cys	Val	Cys	Val	Asn	Gly	Trp	Ser	Gly	Asp	Asp	Cys	Ser
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Glu	Asn	Ile	Asp	Asp	Cys	Ala	Phe	Ala	Ser	Cys	Thr	Pro	Gly	Ser	Thr
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Ala	Gly	Leu	Leu	Cys	His	Leu	Asp	Asp	Ala	Cys	Ile	Ser	Asn	Pro	Cys
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Cys	Thr	Cys	Pro	Gln	Gly	Tyr	Lys	Gly	Ala	Asp	Cys	Thr	Glu	Asp	Val
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Asp	Glu	Cys	Ala	Met	Ala	Asn	Ser	Asn	Pro	Cys	Glu	His	Ala	Gly	Lys
			420					425					430		
Cys	Val	Asn	Thr	Asp	Gly	Ala	Phe	His	Cys	Glu	Cys	Leu	Lys	Gly	Tyr
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Cys	Gln	Asn	Asp	Ala	Thr	Cys	Leu	Asp	Lys	Ile	Gly	Gly	Phe	Thr	Cys
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Leu	Cys	Met	Pro	Gly	Phe	Lys	Gly	Val	His	Cys	Glu	Leu	Glu	Ile	Asn
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Glu	Cys	Gln	Ser	Asn	Pro	Cys	Val	Asn	Asn	Gly	Gln	Cys	Val	Asp	Lys
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Val	Asn	Arg	Phe	Gln	Cys	Leu	Cys	Pro	Pro	Gly	Phe	Thr	Gly	Pro	Val
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Asp	Pro	Cys	His	Gly	Gln	Cys	Gln	Asp	Gly	Ile	Asp	Ser	Ser	Tyr	Thr
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	Gly	Phe	Thr	Gly	660	Gln	Arg	Cys	Asn	665	Ile	Asp	Glu	Cys	670	Ala
	Asn	Pro	Cys	Arg	675	Lys	Gly	Ala	Thr	680	Cys	Ile	Asn	Gly	Val	Asn
	Arg	Cys	Ile	Cys	690	Pro	Glu	Gly	Pro	695	His	His	Pro	Ser	Cys	Tyr
705	Val	Asn	Glu	Cys	710	Leu	Ser	Asn	Pro	715	Cys	Ile	His	Gly	Asn	Cys
	Gly	Leu	Ser	Gly	725	Tyr	Lys	Cys	Leu	730	Cys	Asp	Ala	Gly	Trp	Val
	Asn	Cys	Glu	Val	740	Asp	Lys	Asn	Glu	745	Cys	Leu	Ser	Asn	Pro	Cys
	Gly	Gly	Thr	Cys	755	Asp	Asn	Leu	Val	760	Asn	Gly	Tyr	Arg	Cys	Thr
	Lys	Gly	Phe	Lys	770	Gly	Tyr	Asn	Cys	775	Gln	Val	Asn	Ile	Asp	Glu
785	Ser	Asn	Pro	Cys	790	Leu	Asn	Gln	Gly	795	Thr	Cys	Phe	Asp	Asp	Ile
	Tyr	Thr	Cys	His	805	Cys	Val	Leu	Pro	810	Tyr	Thr	Gly	Lys	Asn	Cys
	Val	Leu	Ala	Pro	820	Cys	Ser	Pro	Asn	825	Pro	Cys	Glu	Asn	Ala	Ala
	Lys	Glu	Ser	Pro	835	Asn	Phe	Glu	Ser	840	Tyr	Thr	Cys	Leu	Cys	Ala
	Trp	Gln	Gly	Gln	850	Arg	Cys	Thr	Ile	855	Asp	Ile	Asp	Glu	Cys	Ile
865	Pro	Cys	Met	Asn	870	His	Gly	Leu	Cys	875	Asn	Thr	Gln	Gly	Ser	Tyr
	Cys	Glu	Cys	Pro	885	Pro	Gly	Phe	Ser	890	Gly	Met	Asp	Cys	Glu	Glu
	Asp	Asp	Cys	Leu	900	Ala	Asn	Pro	Cys	905	Gln	Asn	Gly	Gly	Ser	Cys
	Gly	Val	Asn	Thr	915	Phe	Ser	Cys	Leu	920	Cys	Leu	Pro	Gly	Phe	Thr
	Lys	Cys	Gln	Thr	930	Asp	Met	Asn	Glu	935	Cys	Leu	Ser	Glu	Pro	Cys
945	Gly	Gly	Thr	Cys	950	Ser	Asp	Tyr	Val	955	Asn	Ser	Tyr	Thr	Cys	Lys
	Ala	Gly	Phe	Asp	965	Gly	Val	His	Cys	970	Glu	Asn	Asn	Ile	Asn	Glu
	Glu	Ser	Ser	Cys	980	Phe	Asn	Gly	Gly	985	Thr	Cys	Val	Asp	Gly	Ile
	Phe	Ser	Cys	Leu	995	Cys	Pro	Val	Gly	1000	Phe	Thr	Gly	Ser	Phe	Cys
	Glu	Ile	Asn	Glu	1010	Cys	Ser	Ser	His	1015	Pro	Cys	Leu	Asn	Glu	Gly
1025	Val	Asp	Gly	Leu	1030	Gly	Thr	Tyr	Arg	1035	Cys	Ser	Cys	Pro	Leu	Gly
	Gly	Lys	Asn	Cys	1045	Gln	Thr	Leu	Val	1050	Asn	Leu	Cys	Ser	Arg	Ser
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																Cys

Lys Asn Lys Gly Thr Cys Val Gln Lys Lys Ala Glu Ser Gln Cys Leu
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 Cys Pro Ser Gly Trp Ala Gly Ala Tyr Cys Asp Val Pro Asn Val Ser
 1090 1095 1100
 Cys Asp Ile Ala Ala Ser Arg Arg Gly Val Leu Val Glu His Leu Cys
 1105 1110 1115 1120
 Gln His Ser Gly Val Cys Ile Asn Ala Gly Asn Thr His Tyr Cys Gln
 1125 1130 1135
 Cys Pro Leu Gly Tyr Thr Gly Ser Tyr Cys Glu Glu Gln Leu Asp Glu
 1140 1145 1150
 Cys Ala Ser Asn Pro Cys Gln His Gly Ala Thr Cys Ser Asp Phe Ile
 1155 1160 1165
 Gly Gly Tyr Arg Cys Glu Cys Val Pro Gly Tyr Gln Gly Val Asn Cys
 1170 1175 1180
 Glu Tyr Glu Val Asp Glu Cys Gln Asn Gln Pro Cys Gln Asn Gly Gly
 1185 1190 1195 1200
 Thr Cys Ile Asp Leu Val Asn His Phe Lys Cys Ser Cys Pro Pro Gly
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 Thr Arg Gly Leu Leu Cys Glu Glu Asn Ile Asp Asp Cys Ala Arg Gly
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 Pro His Cys Leu Asn Gly Gly Gln Cys Met Asp Arg Ile Gly Gly Tyr
 1235 1240 1245
 Ser Cys Arg Cys Leu Pro Gly Phe Ala Gly Glu Arg Cys Glu Gly Asp
 1250 1255 1260
 Ile Asn Glu Cys Leu Ser Asn Pro Cys Ser Ser Glu Gly Ser Leu Asp
 1265 1270 1275 1280
 Cys Ile Gln Leu Thr Asn Asp Tyr Leu Cys Val Cys Arg Ser Ala Phe
 1285 1290 1295
 Thr Gly Arg His Cys Glu Thr Phe Val Asp Val Cys Pro Gln Met Pro
 1300 1305 1310
 Cys Leu Asn Gly Gly Thr Cys Ala Val Ala Ser Asn Met Pro Asp Gly
 1315 1320 1325
 Phe Ile Cys Arg Cys Pro Pro Gly Phe Ser Gly Ala Arg Cys Gln Ser
 1330 1335 1340
 Ser Cys Gly Gln Val Lys Cys Arg Lys Gly Glu Gln Cys Val His Thr
 1345 1350 1355 1360
 Ala Ser Gly Pro Arg Cys Phe Cys Pro Ser Pro Arg Asp Cys Glu Ser
 1365 1370 1375
 Gly Cys Ala Ser Ser Pro Cys Gln His Gly Gly Ser Cys His Pro Gln
 1380 1385 1390
 Arg Gln Pro Pro Tyr Tyr Ser Cys Gln Cys Ala Pro Pro Phe Ser Gly
 1395 1400 1405
 Ser Arg Cys Glu Leu Tyr Thr Ala Pro Pro Ser Thr Pro Pro Ala Thr
 1410 1415 1420
 Cys Leu Ser Gln Tyr Cys Ala Asp Lys Ala Arg Asp Gly Val Cys Asp
 1425 1430 1435 1440
 Glu Ala Cys Asn Ser His Ala Cys Gln Trp Asp Gly Gly Asp Cys Ser
 1445 1450 1455
 Leu Thr Met Glu Asn Pro Trp Ala Asn Cys Ser Ser Pro Leu Pro Cys
 1460 1465 1470
 Trp Asp Tyr Ile Asn Asn Gln Cys Asp Glu Leu Cys Asn Thr Val Glu
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 Cys Leu Phe Asp Asn Phe Glu Cys Gln Gly Asn Ser Lys Thr Cys Lys
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 Tyr Asp Lys Tyr Cys Ala Asp His Phe Lys Asp Asn His Cys Asn Gln

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Gly Cys Asn Ser	Glu Glu Cys Gly Trp Asp	Gly Leu Asp Cys Ala Ala				
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Asp Gln Pro Glu Asn	Leu Ala Glu Gly Thr	Leu Val Ile Val Val Leu				
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Met Pro Pro Glu Gln	Leu Leu Gln Asp Ala Arg	Ser Phe Leu Arg Ala				
	1555	1560		1565		
Leu Gly Thr Leu Leu	His Thr Asn Leu Arg	Ile Lys Arg Asp Ser Gln				
	1570	1575		1580		
Gly Glu Leu Met Val	Tyr Pro Tyr Tyr Gly	Glu Lys Ser Ala Ala Met				
1585	1590	1595		1600		
Lys Lys Gln Arg Met	Thr Arg Arg Ser Leu	Pro Gly Glu Gln Glu Gln				
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Glu Val Ala Gly Ser	Lys Val Phe Leu Glu	Ile Asp Asn Arg Gln Cys				
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Val Gln Asp Ser Asp	His Cys Phe Lys Asn	Thr Asp Ala Ala Ala Ala				
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Leu Leu Ala Ser His	Ala Ile Gln Gly Thr	Leu Ser Tyr Pro Leu Val				
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Ser Val Val Ser Glu	Ser Leu Thr Pro Glu	Arg Thr Gln Leu Leu Tyr				
1665	1670	1675		1680		
Leu Leu Ala Val Ala	Val Val Ile Ile Leu	Phe Ile Ile Leu Leu Gly				
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Val Ile Met Ala Lys	Arg Lys Arg Lys His	Gly Ser Leu Trp Leu Pro				
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Glu Gly Phe Thr Leu	Arg Arg Asp Ala Ser	Asn His Lys Arg Arg Glu				
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Pro Val Gly Gln Asp	Ala Val Gly Leu Lys	Asn Leu Ser Val Gln Val				
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Ser Glu Ala Asn Leu	Ile Gly Thr Gly Thr	Ser Glu His Trp Val Asp				
1745	1750	1755		1760		
Asp Glu Gly Pro Gln	Pro Lys Lys Val Lys	Ala Glu Asp Glu Ala Leu				
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Leu Ser Glu Glu Asp	Asp Pro Ile Asp	Arg Arg Pro Trp Thr Gln Gln				
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His Leu Glu Ala Ala	Asp Ile Arg Arg Thr	Pro Ser Leu Ala Leu Thr				
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Pro Pro Gln Ala Glu	Gln Glu Val Asp	Val Leu Asp Val Asn Val Arg				
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Gly Pro Asp Gly Cys	Thr Pro Leu Met Leu	Ala Ser Leu Arg Gly Gly				
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Asn Ile Ile Thr Asp	Leu Val Tyr Gln	Gly Ala Ser Leu Gln Ala Gln				
	1860	1865		1870		
Thr Asp Arg Thr Gly	Glu Met Ala Leu His	Leu Ala Ala Arg Tyr Ser				
	1875	1880		1885		
Arg Ala Asp Ala Ala	Lys Arg Leu Leu Asp	Ala Gly Ala Asp Ala Asn				
	1890	1895		1900		
Ala Gln Asp Asn Met	Gly Arg Cys Pro Leu	His Ala Ala Val Ala Ala				
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Asp Ala Gln Gly Val	Phe Gln Ile Leu Ile	Arg Asn Arg Val Thr Asp				
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Leu Asp Ala Arg Met	Asn Asp Gly Thr	Thr Pro Leu Ile Leu Ala Ala				
	1940	1945		1950		

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Ala	Ala	Val	Asn	Asn	Val	Glu	Ala	Thr	Leu	Leu	Leu	Leu	Lys	Asn	Gly		
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Ala	Ala	Arg	Glu	Gly	Ser	Tyr	Glu	Ala	Ala	Lys	Ile	Leu	Leu	Asp	His		
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Phe	Ala	Asn	Arg	Asp	Ile	Thr	Asp	His	Met	Asp	Arg	Leu	Pro	Arg	Asp		
	2035					2040						2045					
Val	Ala	Arg	Asp	Arg	Met	His	His	Asp	Ile	Val	Arg	Leu	Leu	Asp	Glu		
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Tyr	Asn	Val	Thr	Pro	Ser	Pro	Pro	Gly	Thr	Val	Leu	Thr	Ser	Ala	Leu		
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Thr	Pro	Met	Gly	Lys	Lys	Ser	Arg	Arg	Pro	Ser	Ala	Lys	Ser	Thr	Met		
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Ser	Arg	Arg	Lys	Lys	Ser	Leu	Ser	Glu	Lys	Val	Gln	Leu	Ser	Glu	Ser		
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Ser	Val	Thr	Leu	Ser	Pro	Val	Asp	Ser	Leu	Glu	Ser	Pro	His	Thr	Tyr		
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Val	Ser	Asp	Thr	Thr	Ser	Ser	Pro	Met	Ile	Thr	Ser	Pro	Gly	Ile	Leu		
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Gln	Ala	Ser	Pro	Asn	Pro	Met	Leu	Ala	Thr	Ala	Ala	Pro	Pro	Ala	Pro		
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Val	His	Ala	Gln	His	Ala	Leu	Ser	Phe	Ser	Asn	Leu	His	Glu	Met	Gln		
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Leu	Ser	His	His	His	Ile	Val	Ser	Pro	Gly	Ser	Gly	Ser	Ala	Gly	Ser		
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Leu	Ser	Arg	Leu	His	Pro	Val	Pro	Val	Pro	Ala	Asp	Trp	Met	Asn	Arg		
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Met	Glu	Val	Asn	Glu	Thr	Gln	Tyr	Asn	Glu	Met	Phe	Gly	Met	Val	Leu		
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Ala	Pro	Ala	Glu	Gly	Thr	His	Pro	Gly	Ile	Ala	Pro	Gln	Ser	Arg	Pro		
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Pro	Glu	Gly	Lys	His	Ile	Thr	Thr	Pro	Arg	Glu	Pro	Leu	Pro	Pro	Ile		
	2290					2295					2300						
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Pro	Thr	Met	Tyr	Gln	Ile	Pro	Glu	Met	Ala	Arg	Leu	Pro	Ser	Val	Ala		
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Phe	Pro	Thr	Ala	Met	Met	Pro	Gln	Gln	Asp	Gly	Gln	Val	Ala	Gln	Thr		
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Ile	Leu	Pro	Ala	Tyr	His	Pro	Phe	Pro	Ala	Ser	Val	Gly	Lys	Tyr	Pro		
	2370					2375					2380						
Thr	Pro	Pro	Ser	Gln	His	Ser	Tyr	Ala	Ser	Ser	Asn	Ala	Ala	Glu	Arg		

2385		2390		2395		2400									
Thr	Pro	Ser	His	Ser	Gly	His	Leu	Gln	Gly	Glu	His	Pro	Tyr	Leu	Thr
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Pro	Ser	Pro	Glu	Ser	Pro	Asp	Gln	Trp	Ser	Ser	Ser	Ser	Pro	His	Ser
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Ala	Ser	Asp	Trp	Ser	Asp	Val	Thr	Thr	Ser	Pro	Thr	Pro	Gly	Gly	Ala
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Gly	Gly	Gly	Gln	Arg	Gly	Pro	Gly	Thr	His	Met	Ser	Glu	Pro	Pro	His
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Asn	Gly	Gly	Lys	Cys	Glu	Ala	Ala	Asn	Gly	Thr	Glu	Ala	Cys	Val	Cys
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Gly	Gly	Ala	Phe	Val	Gly	Pro	Arg	Cys	Gln	Asp	Pro	Asn	Pro	Cys	Leu
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Ser	Thr	Pro	Cys	Lys	Asn	Ala	Gly	Thr	Cys	His	Val	Val	Asp	Arg	Arg
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Gly	Val	Ala	Asp	Tyr	Ala	Cys	Ser	Cys	Ala	Leu	Gly	Phe	Ser	Gly	Pro
			85					90					95		
Leu	Cys	Leu	Thr	Pro	Leu	Asp	Asn	Ala	Cys	Leu	Thr	Asn	Pro	Cys	Arg
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Asn	Gly	Gly	Thr	Cys	Asp	Leu	Leu	Thr	Leu	Thr	Glu	Tyr	Lys	Cys	Arg
		115				120					125				
Cys	Pro	Pro	Gly	Trp	Ser	Gly	Lys	Ser	Cys	Gln	Gln	Ala	Asp	Pro	Cys
	130				135					140					
Ala	Ser	Asn	Pro	Cys	Ala	Asn	Gly	Gly	Gln	Cys	Leu	Pro	Phe	Glu	Ala
145				150					155					160	
Ser	Tyr	Ile	Cys	His	Cys	Pro	Pro	Ser	Phe	His	Gly	Pro	Thr	Cys	Trp
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Gln	Asp	Val	Asn	Glu	Cys	Gly	Gln	Lys	Pro	Arg	Leu	Cys	Arg	His	Gly

			180					185					190				
Gly	Thr	Cys	His	Asn	Glu	Val	Gly	Ser	Tyr	Arg	Cys	Val	Cys	Arg	Ala		
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Thr	His	Thr	Gly	Pro	Asn	Cys	Glu	Trp	Pro	Tyr	Val	Pro	Cys	Ser	Pro		
	210					215					220						
Ser	Pro	Cys	Gln	Asn	Gly	Gly	Thr	Cys	Arg	Pro	Thr	Gly	Asp	Val	Thr		
225				230					235					240			
His	Glu	Cys	Ala	Cys	Leu	Pro	Gly	Phe	Thr	Gly	Gln	Asn	Cys	Glu	Glu		
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Asn	Ile	Asp	Asp	Cys	Pro	Gly	Asn	Asn	Cys	Lys	Asn	Gly	Gly	Ala	Cys		
		260					265					270					
Val	Asp	Gly	Val	Asn	Thr	Tyr	Asn	Cys	Pro	Cys	Pro	Pro	Glu	Trp	Thr		
	275						280				285						
Gly	Gln	Tyr	Cys	Thr	Glu	Asp	Val	Asp	Glu	Cys	Gln	Leu	Met	Pro	Asn		
	290					295					300						
Ala	Cys	Gln	Asn	Gly	Gly	Thr	Cys	His	Asn	Thr	His	Gly	Gly	Tyr	Asn		
305				310					315					320			
Cys	Val	Cys	Val	Asn	Gly	Trp	Thr	Gly	Glu	Asp	Cys	Ser	Glu	Asn	Ile		
			325					330						335			
Asp	Asp	Cys	Ala	Ser	Ala	Ala	Cys	Phe	His	Gly	Ala	Thr	Cys	His	Asp		
		340					345					350					
Arg	Val	Ala	Ser	Phe	Tyr	Cys	Glu	Cys	Pro	His	Gly	Arg	Thr	Gly	Leu		
	355						360					365					
Leu	Cys	His	Leu	Asn	Asp	Ala	Cys	Ile	Ser	Asn	Pro	Cys	Asn	Glu	Gly		
	370			375							380						
Ser	Asn	Cys	Asp	Thr	Asn	Pro	Val	Asn	Gly	Lys	Ala	Ile	Cys	Thr	Cys		
385				390					395					400			
Pro	Ser	Gly	Tyr	Thr	Gly	Pro	Ala	Cys	Ser	Gln	Asp	Val	Asp	Glu	Cys		
			405					410					415				
Ser	Leu	Gly	Ala	Asn	Pro	Cys	Glu	His	Ala	Gly	Lys	Cys	Ile	Asn	Thr		
	420						425					430					
Leu	Gly	Ser	Phe	Glu	Cys	Gln	Cys	Leu	Gln	Gly	Tyr	Thr	Gly	Pro	Arg		
	435					440					445						
Cys	Glu	Ile	Asp	Val	Asn	Glu	Cys	Val	Ser	Asn	Pro	Cys	Gln	Asn	Asp		
	450					455				460							
Ala	Thr	Cys	Leu	Asp	Gln	Ile	Gly	Glu	Phe	Gln	Cys	Met	Cys	Met	Pro		
465				470				475						480			
Gly	Tyr	Glu	Gly	Val	His	Cys	Glu	Val	Asn	Thr	Asp	Glu	Cys	Ala	Ser		
			485					490				495					
Ser	Pro	Cys	Leu	His	Asn	Gly	Arg	Cys	Leu	Asp	Lys	Ile	Asn	Glu	Phe		
		500					505					510					
Gln	Cys	Glu	Cys	Pro	Thr	Gly	Phe	Thr	Gly	His	Leu	Cys	Gln	Tyr	Asp		
	515					520					525						
Val	Asp	Glu	Cys	Ala	Ser	Thr	Pro	Cys	Lys	Asn	Gly	Ala	Lys	Cys	Leu		
	530					535					540						
Asp	Gly	Pro	Asn	Thr	Tyr	Thr	Cys	Val	Cys	Thr	Glu	Gly	Tyr	Thr	Gly		
545				550					555					560			
Thr	His	Cys	Glu	Val	Asp	Ile	Asp	Glu	Cys	Asp	Pro	Asp	Pro	Cys	His		
			565					570					575				
Tyr	Gly	Ser	Cys	Lys	Asp	Gly	Val	Ala	Thr	Phe	Thr	Cys	Leu	Cys	Arg		
		580					585					590					
Pro	Gly	Tyr	Thr	Gly	His	His	Cys	Glu	Thr	Asn	Ile	Asn	Glu	Cys	Ser		
	595					600					605						
Ser	Gln	Pro	Cys	Arg	Leu	Trp	Gly	Thr	Cys	Gln	Asp	Pro	Asp	Asn	Ala		
	610				615						620						

Tyr 625	Leu	Cys	Phe	Cys 630	Leu	Lys	Gly	Thr	Thr	Gly 635	Pro	Asn	Cys	Glu	Ile 640
Asn 645	Leu	Asp	Asp	Cys	Ala	Ser	Ser	Pro	Cys 650	Asp	Ser	Gly	Thr	Cys	Leu 655
Asp 660	Lys	Ile	Asp	Gly	Tyr	Glu	Cys	Ala	Cys 665	Glu	Pro	Gly	Tyr	Thr	Gly 670
Ser 675	Met	Cys	Asn	Ser	Asn	Ile	Asp	Glu	Cys 680	Ala	Gly	Asn	Pro	Cys	His 685
Asn 690	Gly	Gly	Thr	Cys	Glu	Asp	Gly	Ile	Asn	Gly 700	Phe	Thr	Cys	Arg	Cys 705
Pro 705	Glu	Gly	Tyr	His	Asp	Pro	Thr	Cys	Leu	Ser 715	Glu	Val	Asn	Glu	Cys 720
Asn 725	Ser	Asn	Pro	Cys	Val	His	Gly	Ala	Cys 730	Trp	Asp	Ser	Leu	Asn	Gly 735
Tyr 740	Lys	Cys	Asp	Cys	Asp	Pro	Gly	Trp	Ser 745	Gly	Thr	Asn	Cys	Asp	Ile 750
Asn 755	Asn	Asn	Glu	Cys	Glu	Ser	Asn	Pro	Cys 760	Val	Asn	Gly	Gly	Thr	Cys 765
Lys 770	Asp	Met	Thr	Ser	Gly	Ile	Val	Cys	Thr 775	Cys	Trp	Glu	Gly	Phe	Ser 780
Gly 785	Pro	Asn	Cys	Gln	Thr	Asn	Ile	Asn	Glu 790	Cys	Ala	Ser	Asn	Pro	Cys 800
Leu 805	Asn	Lys	Gly	Thr	Cys	Ile	Asp	Asp	Val 810	Ala	Gly	Tyr	Lys	Cys	Asn 815
Cys 820	Leu	Leu	Pro	Tyr	Thr	Gly	Ala	Thr	Cys 825	Glu	Val	Val	Leu	Ala	Pro 830
Cys 835	Ala	Pro	Ser	Pro	Cys	Arg	Asn	Gly	Gly 840	Glu	Cys	Arg	Gln	Ser	Glu 845
Asp 850	Tyr	Glu	Ser	Phe	Ser	Cys	Val	Cys	Pro 855	Thr	Ala	Gly	Ala	Lys	Gly 860
Gln 865	Thr	Cys	Glu	Val	Asp	Ile	Asn	Glu	Cys 870	Val	Leu	Ser	Pro	Cys	Trp 875
His 885	Gly	Ala	Ser	Cys	Gln	Asn	Thr	His	Gly 890	Xaa	Tyr	Arg	Cys	His	Cys 895
Gln 900	Ala	Gly	Tyr	Ser	Gly	Arg	Asn	Cys 905	Glu	Thr	Asp	Ile	Asp	Asp	Cys 910
Trp 915	Pro	Asn	Pro	Cys	His	Asn	Gly	Gly 920	Ser	Cys	Thr	Asp	Gly	Ile	Asn 925
Thr 930	Ala	Phe	Cys	Asp	Cys	Leu	Pro	Gly 935	Phe	Trp	Gly	Thr	Phe	Cys	Glu 940
Glu 945	Asp	Ile	Asn	Glu	Cys	Ala	Ser	Asp 950	Pro	Cys	Arg	Asn	Gly	Ala	Asn 955
Cys 965	Thr	Asp	Cys	Val	Asp	Ser	Tyr	Thr 970	Cys	Thr	Cys	Pro	Ala	Gly	Phe 975
Ser 980	Gly	Ile	His	Cys	Glu	Asn	Asn	Thr 985	Pro	Asp	Cys	Thr	Glu	Ser	Ser 990
Cys 995	Phe	Asn	Gly	Gly	Thr	Cys	Val	Asp 1000	Gly	Ile	Asn	Ser	Phe	Thr	Cys 1005
Leu 1010	Cys	Pro	Pro	Gly	Phe	Thr	Gly	Ser 1015	Tyr	Cys	Gln	His	Val	Val	Asn 1020
Glu 1025	Cys	Asp	Ser	Arg	Pro	Cys	Leu	Leu 1030	Gly	Gly	Thr	Cys	Gln	Asp	Gly 1035
Arg 1045	Gly	Leu	His	Arg	Cys	Thr	Cys	Pro 1050	Gln	Gly	Tyr	Thr	Gly	Pro	Asn 1055
Cys	Gln	Asn	Leu	Val	His	Trp	Cys	Asp	Ser	Ser	Pro	Cys	Lys	Asn	Gly

His Cys Asp Ser Gln Cys Asn Ser Ala Gly Cys Leu Phe Asp Gly Phe	1505	1510	1515	1520
Asp Cys Gln Arg Ala Glu Gly Gln Cys Asn Pro Leu Tyr Asp Gln Tyr	1525	1530	1535	
Cys Lys Asp His Phe Ser Asp Gly His Cys Asp Gln Gly Cys Asn Ser	1540	1545	1550	
Ala Glu Cys Glu Trp Asp Gly Leu Asp Cys Ala Glu His Val Pro Glu	1555	1560	1565	
Arg Leu Ala Ala Gly Thr Leu Val Val Val Val Leu Met Pro Pro Glu	1570	1575	1580	
Gln Leu Arg Asn Ser Ser Phe His Phe Leu Trp Glu Leu Ser Arg Val	1585	1590	1595	1600
Leu His Thr Asn Val Val Phe Lys Arg Asp Ala His Gly Gln Gln Met	1605	1610	1615	
Ile Phe Pro Tyr Tyr Gly Arg Glu Glu Glu Leu Arg Lys His Pro Ile	1620	1625	1630	
Lys Arg Ala Ala Glu Gly Trp Ala Ala Pro Asp Ala Leu Leu Gly Gln	1635	1640	1645	
Val Lys Ala Ser Leu Leu Pro Gly Gly Ser Glu Gly Gly Trp Trp Trp	1650	1655	1660	
Arg Glu Leu Asp Pro Met Asp Val Arg Gly Ser Ile Val Tyr Leu Glu	1665	1670	1675	1680
Ile Asp Asn Trp Gln Cys Val Gln Ala Ser Ser Gln Cys Phe Gln Ser	1685	1690	1695	
Ala Thr Asp Val Ala Ala Phe Leu Gly Ala Leu Ala Ser Leu Gly Ser	1700	1705	1710	
Leu Asn Ile Pro Tyr Lys Ile Glu Ala Val Gln Ser Glu Thr Val Glu	1715	1720	1725	
Pro Pro Pro Pro Ala Gln Leu His Phe Met Tyr Val Ala Ala Ala Ala	1730	1735	1740	
Phe Val Leu Leu Phe Phe Val Gly Cys Gly Val Leu Leu Ser Arg Lys	1745	1750	1755	1760
Arg Trp Xaa Gln His Gly Gln Leu Trp Phe Pro Glu Gly Phe Lys Val	1765	1770	1775	
Ser Glu Ala Ser Lys Lys Lys Trp Trp Glu Xaa Leu Gly Glu Asp Ser	1780	1785	1790	
Val Gly Leu Lys Pro Leu Lys Asn Ala Ser Asp Gly Ala Leu Met Asp	1795	1800	1805	
Asp Asn Gln Asn Glu Trp Gly Asp Glu Asp Leu Glu Thr Lys Lys Phe	1810	1815	1820	
Trp Phe Glu Glu Pro Val Val Leu Pro Asp Leu Asp Asp Gln Thr Asp	1825	1830	1835	1840
His Trp Gln Trp Thr Gln Gln His Leu Asp Ala Ala Asp Leu Arg Met	1845	1850	1855	
Ser Ala Met Ala Pro Thr Pro Pro Gln Gly Glu Val Asp Ala Asp Cys	1860	1865	1870	
Met Asp Val Asn Val Arg Gly Pro Asp Gly Phe Thr Pro Leu Met Ile	1875	1880	1885	
Ala Ser Cys Ser Gly Gly Gly Leu Glu Thr Gly Asn Ser Glu Glu Glu	1890	1895	1900	
Glu Asp Ala Pro Ala Val Ile Ser Asp Phe Ile Tyr Gln Gly Ala Ser	1905	1910	1915	1920
Leu His Asn Gln Thr Asp Arg Thr Gly Glu Thr Ala Leu His Leu Ala	1925	1930	1935	
Ala Arg Tyr Ser Arg Ser Asp Ala Ala Lys Arg Leu Leu Glu Ala Ser				

	1940	1945	1950
Ala Asp	Ala Asn Ile Gln Asp	Asn Met Gly Arg Thr	Pro Leu His Ala
	1955	1960	1965
Ala Val	Ser Ala Asp Ala Gln Gly	Val Phe Gln Ile	Leu Ile Trp Asn
	1970	1975	1980
Arg Ala	Thr Asp Leu Asp Ala Arg	Met His Asp Gly Thr	Thr Pro Leu
	1985	1990	1995
Ile Leu	Ala Ala Arg Leu Ala Val	Glu Gly Met Leu Glu	Asp Leu Ile
	2005	2010	2015
Asn Ser	His Ala Asp Val Asn Ala	Val Asp Asp Leu Gly	Lys Ser Ala
	2020	2025	2030
Leu His	Trp Ala Ala Ala Val	Asn Asn Val Asp Ala	Ala Val Val Leu
	2035	2040	2045
Leu Lys	Asn Gly Ala Asn Lys	Asp Met Gln Asn Asn	Arg Glu Glu Thr
	2050	2055	2060
Pro Leu	Phe Leu Ala Ala Trp	Glu Gly Ser Tyr Glu	Thr Ala Lys Val
	2065	2070	2075
Leu Leu	Asp His Phe Ala Asn	Trp Asp Ile Thr	Asp His Met Asp Arg
	2085	2090	2095
Leu Pro	Arg Asp Ile Ala Gln	Glu Arg Met His His	Asp Ile Val Arg
	2100	2105	2110
Leu Leu	Asp Glu Tyr Asn Leu	Val Arg Ser Pro Gln	Leu His Gly Ala
	2115	2120	2125
Pro Leu	Gly Gly Thr Pro Thr	Leu Ser Pro Pro Leu	Cys Ser Pro Asn
	2130	2135	2140
Gly Tyr	Leu Gly Ser Leu Lys	Pro Gly Val Gln Gly	Lys Lys Val Arg
	2145	2150	2155
Lys Pro	Ser Ser Lys Gly Leu	Ala Cys Gly Ser Lys	Glu Ala Lys Asp
	2165	2170	2175
Leu Lys	Ala Trp Arg Lys Lys	Ser Gln Asp Gly Lys	Gly Cys Leu Leu
	2180	2185	2190
Asp Ser	Ser Gly Met Leu Ser	Pro Val Asp Ser Leu	Glu Ser Pro His
	2195	2200	2205
Gly Tyr	Leu Ser Asp Val Ala	Ser Pro Pro Leu Leu	Pro Ser Pro Phe
	2210	2215	2220
Gln Gln	Ser Pro Ser Val Pro	Leu Asn His Leu Pro	Gly Met Pro Asp
	2225	2230	2235
Thr His	Leu Gly Ile Gly His	Leu Asn Val Ala Ala	Lys Pro Glu Met
	2245	2250	2255
Ala Ala	Leu Gly Gly Gly Trp	Leu Ala Phe Glu Thr	Gly Pro Pro
	2260	2265	2270
Arg Leu	Ser His Leu Pro Val	Ala Ser Gly Thr Ser	Thr Val Leu Gly
	2275	2280	2285
Ser Ser	Ser Gly Gly Ala Leu	Asn Phe Thr Val Gly	Gly Ser Thr Ser
	2290	2295	2300
Leu Asn	Gly Gln Cys Glu Trp	Leu Ser Trp Leu Gln	Ser Gly Met Val
	2305	2310	2315
Pro Asn	Gln Tyr Asn Pro Leu	Trp Gly Ser Val Ala	Pro Gly Pro Leu
	2325	2330	2335
Ser Thr	Gln Ala Pro Ser Leu	Gln His Gly Met Val	Gly Pro Leu His
	2340	2345	2350
Ser Ser	Leu Ala Ala Ser Ala	Leu Ser Gln Met Met	Ser Tyr Gln Gly
	2355	2360	2365
Leu Pro	Ser Thr Trp Leu Ala	Thr Gln Pro His Leu	Val Gln Thr Gln
	2370	2375	2380

Gln Val Gln Pro Gln Asn Leu Gln Met Gln Gln Gln Asn Leu Gln Pro
 2385 2390 2395 2400
 Ala Asn Ile Gln Gln Gln Ser Leu Gln Pro Pro Pro Pro Pro Pro
 2405 2410 2415
 Gln Pro His Leu Gly Val Ser Ser Ala Ala Ser Gly His Leu Gly Trp
 2420 2425 2430
 Ser Phe Leu Ser Gly Glu Pro Ser Gln Ala Asp Val Gln Pro Leu Gly
 2435 2440 2445
 Pro Ser Ser Leu Ala Val His Thr Ile Leu Pro Gln Glu Ser Pro Ala
 2450 2455 2460
 Leu Pro Thr Ser Leu Pro Ser Ser Leu Val Pro Pro Val Thr Ala Ala
 2465 2470 2475 2480
 Gln Phe Leu Thr Pro Pro Ser Gln His Ser Tyr Ser Ser Pro Val Glu
 2485 2490 2495
 Asn Thr Pro Ser His Gln Leu Gln Val Pro Glu His Pro Phe Leu Thr
 2500 2505 2510
 Pro Ser Pro Glu Ser Pro Asp Gln Trp Ser Ser Ser Ser Pro His Ser
 2515 2520 2525
 Asn Val Ser Asp Trp Ser Glu Gly Val Ser Ser Pro Pro Thr Ser Met
 2530 2535 2540
 Gln Ser Gln Ile Ala Arg Ile Pro Glu Ala Phe Lys
 2545 2550 2555

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 Thr Gln Gly Leu Arg Cys Thr Gln Thr Ala Glu Met Cys Leu Asn Gly
 20 25 30
 Gly Arg Cys Glu Met Thr Pro Gly Gly Thr Gly Val Cys Leu Cys Gly
 35 40 45
 Asn Leu Tyr Phe Gly Glu Arg Cys Gln Phe Pro Asn Pro Cys Thr Ile
 50 55 60
 Lys Asn Gln Cys Met Asn Phe Gly Thr Cys Glu Pro Val Leu Gln Gly
 65 70 75 80
 Asn Ala Ile Asp Phe Ile Cys His Cys Pro Val Gly Phe Thr Asp Lys
 85 90 95
 Val Cys Leu Thr Pro Val Asp Asn Ala Cys Val Asn Asn Pro Cys Arg
 100 105 110
 Asn Gly Gly Thr Cys Glu Leu Leu Asn Ser Val Thr Glu Tyr Lys Cys
 115 120 125
 Arg Cys Pro Pro Gly Trp Thr Gly Asp Ser Cys Gln Gln Ala Asp Pro
 130 135 140
 Cys Ala Ser Asn Pro Cys Ala Asn Gly Gly Lys Cys Leu Pro Phe Glu
 145 150 155 160
 Ile Gln Tyr Ile Cys Lys Cys Pro Pro Gly Phe His Gly Ala Thr Cys
 165 170 175
 Lys Gln Asp Ile Asn Glu Cys Ser Gln Asn Pro Cys Lys Asn Gly Gly
 180 185 190
 Gln Cys Ile Asn Glu Phe Gly Ser Tyr Arg Cys Thr Cys Gln Asn Arg

		195				200				205					
Phe	Thr	Gly	Arg	Asn	Cys	Asp	Glu	Pro	Tyr	Val	Pro	Cys	Asn	Pro	Ser
	210					215					220				
Pro	Cys	Leu	Asn	Gly	Gly	Thr	Cys	Arg	Gln	Thr	Asp	Asp	Thr	Ser	Tyr
225					230					235					240
Asp	Cys	Thr	Cys	Leu	Pro	Gly	Phe	Ser	Gly	Gln	Asn	Cys	Glu	Glu	Asn
				245					250					255	
Ile	Asp	Asp	Cys	Pro	Ser	Asn	Asn	Cys	Arg	Asn	Gly	Gly	Thr	Cys	Val
			260					265					270		
Asp	Gly	Val	Asn	Thr	Tyr	Asn	Cys	Gln	Cys	Pro	Pro	Asp	Trp	Thr	Gly
		275					280					285			
Gln	Tyr	Cys	Thr	Glu	Asp	Val	Asp	Glu	Cys	Gln	Leu	Met	Pro	Asn	Ala
	290					295					300				
Cys	Gln	Asn	Gly	Gly	Thr	Cys	His	Asn	Thr	Tyr	Gly	Gly	Tyr	Asn	Cys
305					310					315					320
Val	Cys	Val	Asn	Gly	Trp	Thr	Gly	Glu	Asp	Cys	Ser	Glu	Asn	Ile	Asp
				325					330					335	
Asp	Cys	Ala	Asn	Ala	Ala	Cys	His	Ser	Gly	Ala	Thr	Cys	His	Asp	Arg
			340					345					350		
Val	Ala	Ser	Phe	Tyr	Cys	Glu	Cys	Pro	His	Gly	Arg	Thr	Gly	Leu	Leu
		355					360					365			
Cys	His	Leu	Asp	Asn	Ala	Cys	Ile	Ser	Asn	Pro	Cys	Asn	Glu	Gly	Ser
	370					375					380				
Asn	Cys	Asp	Thr	Asn	Pro	Val	Asn	Gly	Lys	Ala	Ile	Cys	Thr	Cys	Pro
385					390					395					400
Pro	Gly	Tyr	Thr	Gly	Pro	Ala	Cys	Asn	Asn	Asp	Val	Asp	Glu	Cys	Ser
				405					410					415	
Leu	Gly	Ala	Asn	Pro	Cys	Glu	His	Gly	Gly	Arg	Cys	Thr	Asn	Thr	Leu
			420					425					430		
Gly	Ser	Phe	Gln	Cys	Asn	Cys	Pro	Gln	Gly	Tyr	Ala	Gly	Pro	Arg	Cys
		435					440					445			
Glu	Ile	Asp	Val	Asn	Glu	Cys	Leu	Ser	Asn	Pro	Cys	Gln	Asn	Asp	Ser
	450					455					460				
Thr	Cys	Leu	Asp	Gln	Ile	Gly	Glu	Phe	Gln	Cys	Ile	Cys	Met	Pro	Gly
465					470					475					480
Tyr	Glu	Gly	Leu	Tyr	Cys	Glu	Thr	Asn	Ile	Asp	Glu	Cys	Ala	Ser	Asn
				485					490					495	
Pro	Cys	Leu	His	Asn	Gly	Lys	Cys	Ile	Asp	Lys	Ile	Asn	Glu	Phe	Arg
			500					505					510		
Cys	Asp	Cys	Pro	Thr	Gly	Phe	Ser	Gly	Asn	Leu	Cys	Gln	His	Asp	Phe
		515					520					525			
Asp	Glu	Cys	Thr	Ser	Thr	Pro	Cys	Lys	Asn	Gly	Ala	Lys	Cys	Leu	Asp
	530					535					540				
Gly	Pro	Asn	Ser	Tyr	Thr	Cys	Gln	Cys	Thr	Glu	Gly	Phe	Thr	Gly	Arg
545					550					555					560
His	Cys	Glu	Gln	Asp	Ile	Asn	Glu	Cys	Ile	Pro	Asp	Pro	Cys	His	Tyr
				565					570					575	
Gly	Thr	Cys	Lys	Asp	Gly	Ile	Ala	Thr	Phe	Thr	Cys	Leu	Cys	Arg	Pro
			580					585					590		
Gly	Tyr	Thr	Gly	Arg	Leu	Cys	Asp	Asn	Asp	Ile	Asn	Glu	Cys	Leu	Ser
		595					600					605			
Lys	Pro	Cys	Leu	Asn	Gly	Gly	Gln	Cys	Thr	Asp	Arg	Glu	Asn	Gly	Tyr
	610				615						620				
Ile	Cys	Thr	Cys	Pro	Lys	Gly	Thr	Thr	Gly	Val	Asn	Cys	Glu	Thr	Lys
625					630					635					640

Ile	Asp	Asp	Cys	Ala	Ser	Asn	Leu	Cys	Asp	Asn	Gly	Lys	Cys	Ile	Asp	
				645					650					655		
Lys	Ile	Asp	Gly	Tyr	Glu	Cys	Thr	Cys	Glu	Pro	Gly	Tyr	Thr	Gly	Lys	
			660					665					670			
Leu	Cys	Asn	Ile	Asn	Ile	Asn	Glu	Cys	Asp	Ser	Asn	Pro	Cys	Arg	Asn	
		675					680					685				
Gly	Gly	Thr	Cys	Lys	Asp	Gln	Ile	Asn	Gly	Phe	Thr	Cys	Val	Cys	Pro	
	690					695				700						
Asp	Gly	Tyr	His	Asp	His	Met	Cys	Leu	Ser	Glu	Val	Asn	Glu	Cys	Asn	
705					710					715					720	
Ser	Asn	Pro	Cys	Ile	His	Gly	Ala	Cys	His	Asp	Gly	Val	Asn	Gly	Tyr	
				725					730					735		
Lys	Cys	Asp	Cys	Glu	Ala	Gly	Trp	Ser	Gly	Ser	Asn	Cys	Asp	Ile	Asn	
			740					745					750			
Asn	Asn	Glu	Cys	Glu	Ser	Asn	Pro	Cys	Met	Asn	Gly	Gly	Thr	Cys	Lys	
		755					760					765				
Asp	Met	Thr	Gly	Ala	Tyr	Ile	Cys	Thr	Cys	Lys	Ala	Gly	Phe	Ser	Gly	
	770					775					780					
Pro	Asn	Cys	Gln	Thr	Asn	Ile	Asn	Glu	Cys	Ser	Ser	Asn	Pro	Cys	Leu	
785					790					795					800	
Asn	His	Gly	Thr	Cys	Ile	Asp	Asp	Val	Ala	Gly	Tyr	Lys	Cys	Asn	Cys	
				805					810					815		
Met	Leu	Pro	Tyr	Thr	Gly	Ala	Ile	Cys	Glu	Ala	Val	Leu	Ala	Pro	Cys	
			820					825					830			
Ala	Gly	Ser	Pro	Cys	Lys	Asn	Gly	Gly	Arg	Cys	Lys	Glu	Ser	Glu	Asp	
		835					840					845				
Phe	Glu	Thr	Phe	Ser	Cys	Glu	Cys	Pro	Pro	Gly	Trp	Gln	Gly	Gln	Thr	
	850					855					860					
Cys	Glu	Ile	Asp	Met	Asn	Glu	Cys	Val	Asn	Arg	Pro	Cys	Arg	Asn	Gly	
865					870					875					880	
Ala	Thr	Cys	Gln	Asn	Thr	Asn	Gly	Ser	Tyr	Lys	Cys	Asn	Cys	Lys	Pro	
				885					890					895		
Gly	Tyr	Thr	Gly	Arg	Asn	Cys	Glu	Met	Asp	Ile	Asp	Asp	Cys	Gln	Pro	
			900					905					910			
Asn	Pro	Cys	His	Asn	Gly	Gly	Ser	Cys	Ser	Asp	Gly	Ile	Asn	Met	Phe	
		915					920					925				
Phe	Cys	Asn	Cys	Pro	Ala	Gly	Phe	Arg	Gly	Pro	Lys	Cys	Glu	Glu	Asp	
		930				935					940					
Ile	Asn	Glu	Cys	Ala	Ser	Asn	Pro	Cys	Lys	Asn	Gly	Ala	Asn	Cys	Thr	
945					950					955					960	
Asp	Cys	Val	Asn	Ser	Tyr	Thr	Cys	Thr	Cys	Gln	Pro	Gly	Phe	Ser	Gly	
				965					970					975		
Ile	His	Cys	Glu	Ser	Asn	Thr	Pro	Asp	Cys	Thr	Glu	Ser	Ser	Cys	Phe	
			980					985					990			
Asn	Gly	Gly	Thr	Cys	Ile	Asp	Gly	Ile	Asn	Thr	Phe	Thr	Cys	Gln	Cys	
		995					1000					1005				
Pro	Pro	Gly	Phe	Thr	Gly	Ser	Tyr	Cys	Gln	His	Asp	Ile	Asn	Glu	Cys	
		1010				1015					1020					
Asp	Ser	Lys	Pro	Cys	Leu	Asn	Gly	Gly	Thr	Cys	Gln	Asp	Ser	Tyr	Gly	
1025					1030					1035					1040	
Thr	Tyr	Lys	Cys	Thr	Cys	Pro	Gln	Gly	Tyr	Thr	Gly	Leu	Asn	Cys	Gln	
				1045					1050					1055		
Asn	Leu	Val	Arg	Trp	Cys	Asp	Ser	Ser	Pro	Cys	Lys	Asn	Gly	Gly	Lys	
			1060					1065					1070			
Cys	Trp	Gln	Thr	Asn	Asn	Phe	Tyr	Arg	Cys	Glu	Cys	Lys	Ser	Gly	Trp	

1075					1080					1085					
Thr	Gly	Val	Tyr	Cys	Asp	Val	Pro	Ser	Val	Ser	Cys	Glu	Val	Ala	Ala
1090					1095					1100					
Lys	Gln	Gln	Gly	Val	Asp	Ile	Val	His	Leu	Cys	Arg	Asn	Ser	Gly	Met
1105					1110					1115					
Cys	Val	Asp	Thr	Gly	Asn	Thr	His	Phe	Cys	Arg	Cys	Gln	Ala	Gly	Tyr
					1125					1130					
Thr	Gly	Ser	Tyr	Cys	Glu	Glu	Gln	Val	Asp	Glu	Cys	Ser	Pro	Asn	Pro
					1140					1145					
Cys	Gln	Asn	Gly	Ala	Thr	Cys	Thr	Asp	Tyr	Leu	Gly	Gly	Tyr	Ser	Cys
					1155					1160					
Glu	Cys	Val	Ala	Gly	Tyr	His	Gly	Val	Asn	Cys	Ser	Glu	Glu	Ile	Asn
					1170					1175					
Glu	Cys	Leu	Ser	His	Pro	Cys	Gln	Asn	Gly	Gly	Thr	Cys	Ile	Asp	Leu
1185					1190					1195					
Ile	Asn	Thr	Tyr	Lys	Cys	Ser	Cys	Pro	Arg	Gly	Thr	Gln	Gly	Val	His
					1205					1210					
Cys	Glu	Ile	Asn	Val	Asp	Asp	Cys	Thr	Pro	Phe	Tyr	Asp	Ser	Phe	Thr
					1220					1225					
Leu	Glu	Pro	Lys	Cys	Phe	Asn	Asn	Gly	Lys	Cys	Ile	Asp	Arg	Val	Gly
					1235					1240					
Gly	Tyr	Asn	Cys	Ile	Cys	Pro	Pro	Gly	Phe	Val	Gly	Glu	Arg	Cys	Glu
					1250					1255					
Gly	Asp	Val	Asn	Glu	Cys	Leu	Ser	Asn	Pro	Cys	Asp	Ser	Arg	Gly	Thr
1265					1270					1275					
Gln	Asn	Cys	Ile	Gln	Leu	Val	Asn	Asp	Tyr	Arg	Cys	Glu	Cys	Arg	Gln
					1285					1290					
Gly	Phe	Thr	Gly	Arg	Arg	Cys	Glu	Ser	Val	Val	Asp	Gly	Cys	Lys	Gly
					1300					1305					
Met	Pro	Cys	Arg	Asn	Gly	Gly	Thr	Cys	Ala	Val	Ala	Ser	Asn	Thr	Glu
					1315					1320					
Arg	Gly	Phe	Ile	Cys	Lys	Cys	Pro	Pro	Gly	Phe	Asp	Gly	Ala	Thr	Cys
					1330					1335					
Glu	Tyr	Asp	Ser	Arg	Thr	Cys	Ser	Asn	Leu	Arg	Cys	Gln	Asn	Gly	Gly
1345					1350					1355					
Thr	Cys	Ile	Ser	Val	Leu	Thr	Ser	Ser	Lys	Cys	Val	Cys	Ser	Glu	Gly
					1365					1370					
Tyr	Thr	Gly	Ala	Thr	Cys	Gln	Tyr	Pro	Val	Ile	Ser	Pro	Cys	Ala	Ser
					1380					1385					
His	Pro	Cys	Tyr	Asn	Gly	Gly	Thr	Cys	Gln	Phe	Phe	Ala	Glu	Glu	Pro
					1395					1400					
Phe	Phe	Gln	Cys	Phe	Cys	Pro	Lys	Asn	Phe	Asn	Gly	Leu	Phe	Cys	His
					1410					1415					
Ile	Leu	Asp	Tyr	Glu	Phe	Pro	Gly	Gly	Leu	Gly	Lys	Asn	Ile	Thr	Pro
1425					1430					1435					
Pro	Asp	Asn	Asp	Asp	Ile	Cys	Glu	Asn	Glu	Gln	Cys	Ser	Glu	Leu	Ala
					1445					1450					
Asp	Asn	Lys	Val	Cys	Asn	Ala	Asn	Cys	Asn	Asn	His	Ala	Cys	Gly	Trp
					1460					1465					
Asp	Gly	Gly	Asp	Cys	Ser	Leu	Asn	Phe	Asn	Asp	Pro	Trp	Lys	Asn	Cys
					1475					1480					
Thr	Gln	Ser	Leu	Gln	Cys	Trp	Lys	Tyr	Phe	Asn	Asp	Gly	Lys	Cys	Asp
					1490					1495					
Ser	Gln	Cys	Asn	Asn	Thr	Gly	Cys	Leu	Tyr	Asp	Gly	Phe	Asp	Cys	Gln
1505					1510					1515					

Lys Val Glu Val Gln Cys Asn Pro Leu Tyr Asp Gln Tyr Cys Lys Asp
 1525 1530 1535
 His Phe Gln Asp Gly His Cys Asp Gln Gly Cys Asn Asn Ala Glu Cys
 1540 1545 1550
 Glu Trp Asp Gly Leu Asp Cys Ala Asn Met Pro Glu Asn Leu Ala Glu
 1555 1560 1565
 Gly Thr Leu Val Leu Val Val Leu Met Pro Pro Glu Arg Leu Lys Asn
 1570 1575 1580
 Asn Ser Val Asn Phe Leu Arg Glu Leu Ser Arg Val Leu His Thr Asn
 1585 1590 1595 1600
 Val Val Phe Lys Lys Asp Ser Lys Gly Glu Tyr Lys Ile Tyr Pro Tyr
 1605 1610 1615
 Tyr Gly Asn Glu Glu Leu Lys Lys His His Ile Lys Arg Ser Thr
 1620 1625 1630
 Asp Tyr Trp Ser Asp Ala Pro Ser Ala Ile Phe Ser Thr Met Lys Glu
 1635 1640 1645
 Ser Ile Leu Leu Gly Arg His Arg Arg Glu Leu Asp Glu Met Glu Val
 1650 1655 1660
 Arg Gly Ser Ile Val Tyr Leu Glu Ile Asp Asn Arg Gln Cys Tyr Lys
 1665 1670 1675 1680
 Ser Ser Ser Gln Cys Phe Asn Ser Ala Thr Asp Val Ala Ala Phe Leu
 1685 1690 1695
 Gly Ala Leu Ala Ser Leu Gly Ser Leu Asp Thr Leu Ser Tyr Lys Ile
 1700 1705 1710
 Glu Ala Val Lys Ser Glu Asn Met Glu Thr Pro Lys Pro Ser Thr Leu
 1715 1720 1725
 Tyr Pro Met Leu Ser Met Leu Val Ile Pro Leu Leu Ile Ile Phe Val
 1730 1735 1740
 Phe Met Met Val Ile Val Asn Lys Lys Arg Arg Arg Glu His Asp Ser
 1745 1750 1755 1760
 Phe Gly Ser Pro Thr Ala Leu Phe Gln Lys Asn Pro Ala Lys Arg Asn
 1765 1770 1775
 Gly Glu Thr Pro Trp Glu Asp Ser Val Gly Leu Lys Pro Ile Lys Asn
 1780 1785 1790
 Met Thr Asp Gly Ser Phe Met Asp Asp Asn Gln Asn Glu Trp Gly Asp
 1795 1800 1805
 Glu Glu Thr Leu Glu Asn Lys Arg Phe Arg Phe Glu Glu Gln Val Ile
 1810 1815 1820
 Leu Pro Glu Leu Val Asp Asp Lys Thr Asp Pro Arg Gln Trp Thr Arg
 1825 1830 1835 1840
 Gln His Leu Asp Ala Ala Asp Leu Arg Ile Ser Ser Met Ala Pro Thr
 1845 1850 1855
 Pro Pro Gln Gly Glu Ile Glu Ala Asp Cys Met Asp Val Asn Val Arg
 1860 1865 1870
 Gly Pro Asp Gly Phe Thr Pro Leu Met Ile Ala Ser Cys Ser Gly Gly
 1875 1880 1885
 Gly Leu Glu Thr Gly Asn Ser Glu Glu Glu Glu Asp Ala Ser Ala Asn
 1890 1895 1900
 Met Ile Ser Asp Phe Ile Gly Gln Gly Ala Gln Leu His Asn Gln Thr
 1905 1910 1915 1920
 Asp Arg Thr Gly Glu Thr Ala Leu His Leu Ala Ala Arg Tyr Ala Arg
 1925 1930 1935
 Ala Asp Ala Ala Lys Arg Leu Leu Glu Ser Ser Ala Asp Ala Asn Val
 1940 1945 1950
 Gln Asp Asn Met Gly Arg Thr Pro Leu His Ala Ala Val Ala Ala Asp

1955				1960				1965							
Ala	Gln	Gly	Val	Phe	Gln	Ile	Leu	Ile	Arg	Asn	Arg	Ala	Thr	Asp	Leu
1970															
Asp	Ala	Arg	Met	Phe	Asp	Gly	Thr	Thr	Pro	Leu	Ile	Leu	Ala	Ala	Arg
1985															
Leu	Ala	Val	Glu	Gly	Met	Val	Glu	Glu	Leu	Ile	Asn	Ala	His	Ala	Asp
Val	Asn	Ala	Val	Asp	Glu	Phe	Gly	Lys	Ser	Ala	Leu	His	Trp	Ala	Ala
Ala	Val	Asn	Asn	Val	Asp	Ala	Ala	Ala	Val	Leu	Leu	Lys	Asn	Ser	Ala
Asn	Lys	Asp	Met	Gln	Asn	Asn	Lys	Glu	Glu	Thr	Ser	Leu	Phe	Leu	Ala
2050															
Ala	Arg	Glu	Gly	Ser	Tyr	Glu	Thr	Ala	Lys	Val	Leu	Leu	Asp	His	Tyr
2065															
Ala	Asn	Arg	Asp	Ile	Thr	Asp	His	Met	Asp	Arg	Leu	Pro	Arg	Asp	Ile
Ala	Gln	Glu	Arg	Met	His	His	Asp	Ile	Val	His	Leu	Leu	Asp	Glu	Tyr
Asn	Leu	Val	Lys	Ser	Pro	Thr	Leu	His	Asn	Gly	Pro	Leu	Gly	Ala	Thr
Thr	Leu	Ser	Pro	Pro	Ile	Cys	Ser	Pro	Asn	Gly	Tyr	Met	Gly	Asn	Met
Lys	Pro	Ser	Val	Gln	Ser	Lys	Lys	Ala	Arg	Lys	Pro	Ser	Ile	Lys	Gly
2145															
Asn	Gly	Cys	Lys	Glu	Ala	Lys	Glu	Leu	Lys	Ala	Arg	Arg	Lys	Lys	Ser
Gln	Asp	Gly	Lys	Thr	Thr	Leu	Leu	Asp	Ser	Gly	Ser	Ser	Gly	Val	Leu
Ser	Pro	Val	Asp	Ser	Leu	Glu	Ser	Thr	His	Gly	Tyr	Leu	Ser	Asp	Val
Ser	Ser	Pro	Pro	Leu	Met	Thr	Ser	Pro	Phe	Gln	Gln	Ser	Pro	Ser	Met
Pro	Leu	Asn	His	Leu	Thr	Ser	Met	Pro	Glu	Ser	Gln	Leu	Gly	Met	Asn
2225															
His	Ile	Asn	Met	Ala	Thr	Lys	Gln	Glu	Met	Ala	Ala	Gly	Ser	Asn	Arg
Met	Ala	Phe	Asp	Ala	Met	Val	Pro	Arg	Leu	Thr	His	Leu	Asn	Ala	Ser
Ser	Pro	Asn	Thr	Ile	Met	Ser	Asn	Gly	Ser	Met	His	Phe	Thr	Val	Gly
Gly	Ala	Pro	Thr	Met	Asn	Ser	Gln	Cys	Asp	Trp	Leu	Ala	Arg	Leu	Gln
Asn	Gly	Met	Val	Gln	Asn	Gln	Tyr	Asp	Pro	Ile	Arg	Asn	Gly	Ile	Gln
2305															
Gln	Gly	Asn	Ala	Gln	Gln	Ala	Gln	Ala	Leu	Gln	His	Gly	Leu	Met	Thr
Ser	Leu	His	Asn	Gly	Leu	Pro	Ala	Thr	Thr	Leu	Ser	Gln	Met	Met	Thr
Tyr	Gln	Ala	Met	Pro	Asn	Thr	Arg	Leu	Ala	Asn	Gln	Pro	His	Leu	Met
Gln	Ala	Gln	Gln	Met	Gln	Gln	Gln	Asn	Leu	Gln	Leu	His	Gln	Ser	
Met	Gln	Gln	Gln	His	His	Asn	Ser	Ser	Thr	Thr	Ser	Thr	His	Ile	Asn
2385															

Lys	Pro	Cys	Ser	245	Pro	Ser	Pro	Cys	Gln	250	Asn	Ala	Gly	Ile	Cys	255	Arg	Ser
Asn	Gly	Leu	260	Tyr	Glu	Cys	Lys	265	Cys	Pro	Lys	Gly	Phe	270	Glu	Gly	Lys	
Asn	Cys	Glu	275	Asn	Tyr	Asp	Asp	280	Cys	Leu	Gly	His	Leu	285	Cys	Gln	Asn	
Gly	Gly	Thr	290	Cys	Ile	Asp	Gly	295	Ile	Ser	Asp	Tyr	Thr	300	Cys	Arg	Cys	Pro
305					310							315					320	
Pro	Asn	Phe	Thr	Gly	Arg	Phe	Cys	Gln	Asp	330	Asp	Val	Asp	Glu	Cys	Ala		
Gln	Arg	Asp	His	325	Pro	Val	Cys	Gln	Asn	Gly	Ala	Thr	Cys	Thr	Asn	Thr		
His	Gly	Ser	340	Tyr	Ser	Cys	Ile	345	Val	Asn	Gly	Trp	Ala	350	Gly	Leu	Asp	
Cys	Ser	Asn	355	Asn	Thr	Asp	Asp	360	Cys	Lys	Gln	Ala	Ala	365	Cys	Phe	Tyr	Gly
Ala	Thr	Cys	370	Ile	Asp	Gly	Val	375	Gly	Ser	Phe	Tyr	Cys	380	Gln	Cys	Thr	Lys
385					390							395					400	
Gly	Lys	Thr	Gly	Leu	Leu	Cys	His	Leu	Asp	410	Asp	Ala	Cys	415	Thr	Ser	Asn	
Pro	Cys	His	Ala	405	Asp	Ala	Ile	420	Cys	Asp	Thr	Ser	Pro	425	Ile	Asn	Gly	Ser
Tyr	Ala	Cys	Ser	435	Cys	Ala	Thr	440	Gly	Tyr	Lys	Gly	Val	445	Asp	Cys	Ser	Glu
Asp	Ile	Asp	Glu	450	Cys	Asp	Gln	455	Gly	Ser	Pro	Cys	Glu	460	His	Asn	Gly	Ile
Cys	Val	Asn	Thr	Pro	Gly	Ser	Tyr	Arg	Cys	Asn	Cys	Ser	Gln	475	Gly	Phe		
465					470												480	
Thr	Gly	Pro	Arg	Cys	Glu	Thr	Asn	Ile	Asn	490	Glu	Cys	Glu	495	Ser	His	Pro	
Cys	Gln	Asn	Glu	500	Gly	Ser	Cys	Leu	Asp	505	Asp	Pro	Gly	510	Thr	Phe	Arg	Cys
Val	Cys	Met	Pro	Gly	Phe	Thr	Gly	520	Thr	Gln	Cys	Glu	Ile	525	Asp	Ile	Asp	
Glu	Cys	Gln	Ser	Asn	Pro	Cys	Leu	535	Asn	Asp	Gly	Thr	Cys	540	His	Asp	Lys	
Ile	Asn	Gly	Phe	Lys	Cys	Ser	Cys	Ala	Leu	Gly	Phe	Thr	Gly	545	Ala	Arg		
545					550												560	
Cys	Gln	Ile	Asn	Ile	Asp	Asp	Cys	Gln	Ser	570	Gln	Pro	Cys	575	Arg	Asn	Arg	
Gly	Ile	Cys	His	580	Asp	Ser	Ile	Ala	Gly	585	Tyr	Ser	Cys	590	Glu	Cys	Pro	Pro
Gly	Tyr	Thr	Gly	595	Thr	Ser	Cys	Glu	Ile	600	Asn	Ile	Asn	605	Asp	Cys	Asp	Ser
Asn	Pro	Cys	His	Arg	Gly	Lys	Cys	Ile	Asp	615	Asp	Val	Asn	620	Ser	Phe	Lys	
Cys	Leu	Cys	Asp	Pro	Gly	Tyr	Thr	Gly	Tyr	630	Ile	Cys	Gln	635	Lys	Gln	Ile	
625					635												640	
Asn	Glu	Cys	Glu	Ser	645	Asn	Pro	Cys	Gln	650	Phe	Asp	Gly	655	His	Cys	Gln	Asp
Arg	Val	Gly	Ser	Tyr	Tyr	Cys	Gln	Cys	Gln	665	Ala	Gly	Thr	670	Ser	Gly	Lys	
Asn	Cys	Glu	Val	Asn	Val	Asn	Glu	Cys	His	680	Ser	Asn	Pro	685	Cys	Asn	Asn	
675																		

Gly	Ala	Thr	Cys	Ile	Asp	Gly	Ile	Asn	Ser	Tyr	Lys	Cys	Gln	Cys	Val	690	695	700
Pro	Gly	Phe	Thr	Gly	Gln	His	Cys	Glu	Lys	Asn	Val	Asp	Glu	Cys	Ile	705	710	715
Ser	Ser	Pro	Cys	Ala	Asn	Asn	Gly	Val	Cys	Ile	Asp	Gln	Val	Asn	Gly	725	730	735
Tyr	Lys	Cys	Glu	Cys	Pro	Arg	Gly	Phe	Tyr	Asp	Ala	His	Cys	Leu	Ser	740	745	750
Asp	Val	Asp	Glu	Cys	Ala	Ser	Asn	Pro	Cys	Val	Asn	Glu	Gly	Arg	Cys	755	760	765
Glu	Asp	Gly	Ile	Asn	Glu	Phe	Ile	Cys	His	Cys	Pro	Pro	Gly	Tyr	Thr	770	775	780
Gly	Lys	Arg	Cys	Glu	Leu	Asp	Ile	Asp	Glu	Cys	Ser	Ser	Asn	Pro	Cys	785	790	795
Gln	His	Gly	Gly	Thr	Cys	Tyr	Asp	Lys	Leu	Asn	Ala	Phe	Ser	Cys	Gln	805	810	815
Cys	Met	Pro	Gly	Tyr	Thr	Gly	Gln	Lys	Cys	Glu	Thr	Asn	Ile	Asp	Asp	820	825	830
Cys	Val	Thr	Asn	Pro	Cys	Gly	Asn	Gly	Gly	Thr	Cys	Ile	Asp	Lys	Val	835	840	845
Asn	Gly	Tyr	Lys	Cys	Val	Cys	Lys	Val	Pro	Phe	Thr	Gly	Arg	Asp	Cys	850	855	860
Glu	Ser	Lys	Met	Asp	Pro	Cys	Ala	Arg	Asn	Arg	Cys	Lys	Asn	Glu	Ala	865	870	875
Lys	Cys	Thr	Pro	Ser	Ser	Asn	Phe	Leu	Asp	Phe	Ser	Cys	Thr	Cys	Lys	885	890	895
Leu	Gly	Tyr	Thr	Gly	Arg	Tyr	Cys	Asp	Glu	Asp	Ile	Asp	Glu	Cys	Ser	900	905	910
Leu	Ser	Ser	Pro	Cys	Arg	Asn	Gly	Ala	Ser	Cys	Leu	Asn	Val	Pro	Gly	915	920	925
Ser	Tyr	Arg	Cys	Leu	Cys	Thr	Lys	Gly	Tyr	Glu	Gly	Arg	Asp	Cys	Ala	930	935	940
Ile	Asn	Thr	Asp	Asp	Cys	Ala	Ser	Phe	Pro	Cys	Gln	Asn	Gly	Arg	Thr	945	950	955
Cys	Leu	Asp	Gly	Ile	Gly	Asp	Tyr	Ser	Cys	Leu	Cys	Val	Asp	Gly	Phe	965	970	975
Asp	Gly	Lys	His	Cys	Glu	Thr	Asp	Ile	Asn	Glu	Cys	Leu	Ser	Gln	Pro	980	985	990
Cys	Gln	Asn	Gly	Ala	Thr	Cys	Ser	Gln	Tyr	Val	Asn	Ser	Tyr	Thr	Cys	995	1000	1005
Thr	Cys	Pro	Leu	Gly	Phe	Ser	Gly	Ile	Asn	Cys	Gln	Thr	Asn	Asp	Glu	1010	1015	1020
Asp	Cys	Thr	Glu	Ser	Ser	Cys	Leu	Asn	Gly	Gly	Ser	Cys	Ile	Asp	Gly	1025	1030	1035
Ile	Asn	Gly	Tyr	Asn	Cys	Ser	Cys	Leu	Ala	Gly	Tyr	Ser	Gly	Ala	Asn	1045	1050	1055
Cys	Gln	Tyr	Lys	Leu	Asn	Lys	Cys	Asp	Ser	Asn	Pro	Cys	Leu	Asn	Gly	1060	1065	1070
Ala	Thr	Cys	His	Glu	Gln	Asn	Asn	Glu	Tyr	Thr	Cys	His	Cys	Pro	Ser	1075	1080	1085
Gly	Phe	Thr	Gly	Lys	Gln	Cys	Ser	Glu	Tyr	Val	Asp	Trp	Cys	Gly	Gln	1090	1095	1100
Ser	Pro	Cys	Glu	Asn	Gly	Ala	Thr	Cys	Ser	Gln	Met	Lys	His	Gln	Phe	1105	1110	1115
Ser	Cys	Lys	Cys	Ser	Ala	Gly	Trp	Thr	Gly	Lys	Leu	Cys	Asp	Val	Gln			

Lys His Tyr Gly Asp Gly Phe Cys Asp Tyr Gly Cys Asn Asn Ala Glu
 1570 1575 1580
 Cys Ser Trp Asp Gly Leu Asp Cys Glu Asn Lys Thr Gln Ser Pro Val
 1585 1590 1595 1600
 Leu Ala Glu Gly Ala Met Ser Val Val Met Leu Met Asn Val Glu Ala
 1605 1610 1615
 Phe Arg Glu Ile Gln Ala Gln Phe Leu Arg Asn Met Ser His Met Leu
 1620 1625 1630
 Arg Thr Thr Val Arg Leu Lys Lys Asp Ala Leu Gly His Asp Ile Ile
 1635 1640 1645
 Ile Asn Trp Lys Asp Asn Val Arg Val Pro Glu Ile Glu Asp Thr Asp
 1650 1655 1660
 Phe Ala Arg Lys Asn Lys Ile Leu Tyr Thr Gln Gln Val His Gln Thr
 1665 1670 1675 1680
 Gly Ile Gln Ile Tyr Leu Glu Ile Asp Asn Arg Lys Cys Thr Glu Cys
 1685 1690 1695
 Phe Thr His Ala Val Glu Ala Ala Glu Phe Leu Ala Ala Thr Ala Ala
 1700 1705 1710
 Lys His Gln Leu Arg Asn Asp Phe Gln Ile His Ser Val Arg Gly Ile
 1715 1720 1725
 Lys Asn Pro Gly Asp Glu Asp Asn Gly Glu Pro Pro Ala Asn Val Lys
 1730 1735 1740
 Tyr Val Ile Thr Gly Ile Ile Leu Val Ile Ile Ala Leu Ala Phe Phe
 1745 1750 1755 1760
 Gly Met Val Leu Ser Thr Gln Arg Lys Arg Ala His Gly Val Thr Trp
 1765 1770 1775
 Phe Pro Glu Gly Phe Arg Ala Pro Ala Ala Val Met Ser Arg Arg Arg
 1780 1785 1790
 Arg Asp Pro His Gly Gln Glu Met Arg Asn Leu Asn Lys Gln Val Ala
 1795 1800 1805
 Met Gln Ser Gln Gly Val Gly Gln Pro Gly Ala His Thr Ser Asp Asp
 1810 1815 1820
 Glu Ser Asp Met Pro Leu Pro Lys Arg Gln Arg Ser Asp Pro Val Ser
 1825 1830 1835 1840
 Gly Val Gly Leu Gly Asn Asn Gly Gly Tyr Ala Ser Asp His Thr Met
 1845 1850 1855
 Val Ser Glu Tyr Glu Glu Ala Asp Gln Arg Val Trp Ser Gln Ala His
 1860 1865 1870
 Leu Asp Val Val Asp Val Arg Ala Ile Met Thr Pro Pro Ala His Gln
 1875 1880 1885
 Asp Gly Gly Lys His Asp Val Asp Ala Arg Gly Pro Cys Gly Leu Thr
 1890 1895 1900
 Pro Leu Met Ile Ala Ala Val Arg Gly Gly Gly Leu Asp Thr Gly Glu
 1905 1910 1915 1920
 Asp Ile Glu Asn Asn Glu Asp Ser Thr Ala Gln Val Ile Ser Asp Leu
 1925 1930 1935
 Leu Ala Gln Gly Ala Glu Leu Asn Ala Thr Met Asp Lys Thr Gly Glu
 1940 1945 1950
 Thr Ser Leu His Leu Ala Ala Arg Phe Ala Arg Ala Asp Ala Ala Lys
 1955 1960 1965
 Arg Leu Phe His Ala Gly Ala Asp Ala Asn Cys Gln Asp Asn Thr Gly
 1970 1975 1980
 Arg Thr Pro Leu His Ala Ala Val Ala Ala Asp Ala Met Gly Val Phe
 1985 1990 1995 2000
 Gln Ile Leu Leu Arg Asn Arg Ala Thr Asn Leu Asn Ala Arg Met His

				2005				2010				2015			
Asp	Gly	Thr	Thr	Pro	Leu	Ile	Leu	Ala	Ala	Arg	Leu	Ala	Ile	Glu	Gly
			2020								2025				2030
Met	Val	Glu	Asp	Leu	Ile	Thr	Ala	Asp	Ala	Asp	Ile	Asn	Ala	Ala	Asp
		2035					2040							2045	
Asn	Ser	Gly	Lys	Thr	Ala	Leu	His	Trp	Ala	Ala	Ala	Val	Asn	Asn	Thr
	2050					2055					2060				
Glu	Ala	Val	Asn	Ile	Leu	Met	His	His	Ala	Asn	Arg	Asp	Ala	Gln	
2065					2070				2075					2080	
Asp	Asp	Lys	Asp	Glu	Thr	Pro	Leu	Phe	Leu	Ala	Ala	Arg	Glu	Gly	Ser
			2085						2090					2095	
Tyr	Glu	Ala	Cys	Lys	Ala	Leu	Leu	Asp	Asn	Phe	Ala	Asn	Arg	Glu	Ile
		2100							2105					2110	
Thr	Asp	His	Met	Asp	Arg	Leu	Pro	Arg	Asp	Val	Ala	Ser	Glu	Arg	Leu
		2115					2120						2125		
His	His	Asp	Ile	Val	Arg	Leu	Leu	Asp	Glu	His	Val	Pro	Arg	Ser	Pro
	2130					2135					2140				
Gln	Met	Leu	Ser	Met	Thr	Pro	Gln	Ala	Met	Ile	Gly	Ser	Pro	Pro	Pro
2145					2150				2155					2160	
Gly	Gln	Gln	Gln	Pro	Gln	Leu	Ile	Thr	Gln	Pro	Thr	Val	Ile	Ser	Ala
			2165						2170					2175	
Gly	Asn	Gly	Gly	Asn	Asn	Gly	Asn	Gly	Asn	Ala	Ser	Gly	Lys	Gln	Ser
		2180					2185						2190		
Asn	Gln	Thr	Ala	Lys	Gln	Lys	Ala	Ala	Lys	Lys	Ala	Lys	Leu	Ile	Glu
		2195					2200						2205		
Gly	Ser	Pro	Asp	Asn	Gly	Leu	Asp	Ala	Thr	Gly	Ser	Leu	Arg	Arg	Lys
	2210					2215							2220		
Ala	Ser	Ser	Lys	Lys	Thr	Ser	Ala	Ala	Ser	Lys	Lys	Ala	Ala	Asn	Leu
2225					2230				2235					2240	
Asn	Gly	Leu	Asn	Pro	Gly	Gln	Leu	Thr	Gly	Gly	Val	Ser	Gly	Val	Pro
			2245						2250					2255	
Gly	Val	Pro	Pro	Thr	Asn	Ser	Ala	Val	Gln	Ala	Ala	Ala	Ala	Ala	Ala
		2260							2265				2270		
Ala	Ala	Val	Ala	Ala	Met	Ser	His	Glu	Leu	Glu	Gly	Ser	Pro	Val	Gly
		2275					2280						2285		
Val	Gly	Met	Gly	Gly	Asn	Leu	Pro	Ser	Pro	Tyr	Asp	Thr	Ser	Ser	Met
	2290				2295						2300				
Tyr	Ser	Asn	Ala	Met	Ala	Ala	Pro	Leu	Ala	Asn	Gly	Asn	Pro	Asn	Thr
2305					2310					2315				2320	
Gly	Ala	Lys	Gln	Pro	Pro	Ser	Tyr	Glu	Asp	Cys	Ile	Lys	Asn	Ala	Gln
			2325						2330					2335	
Ser	Met	Gln	Ser	Leu	Gln	Gly	Asn	Gly	Leu	Asp	Met	Ile	Lys	Leu	Asp
		2340					2345						2350		
Asn	Tyr	Ala	Tyr	Ser	Met	Gly	Ser	Pro	Phe	Gln	Gln	Glu	Leu	Leu	Asn
	2355						2360						2365		
Gly	Gln	Gly	Leu	Gly	Met	Asn	Gly	Asn	Gly	Gln	Arg	Asn	Gly	Val	Gly
	2370				2375						2380				
Pro	Gly	Val	Leu	Pro	Gly	Leu	Cys	Gly	Met	Gly	Gly	Leu	Ser	Gly	
2385					2390				2395					2400	
Ala	Gly	Asn	Gly	Asn	Ser	Arg	Glu	Gln	Gly	Leu	Ser	Pro	Pro	Tyr	Ser
			2405						2410					2415	
Asn	Gln	Ser	Pro	Pro	His	Ser	Val	Gln	Ser	Ser	Leu	Ala	Leu	Ser	Pro
		2420							2425				2430		
His	Ala	Tyr	Leu	Gly	Ser	Pro	Ser	Pro	Ala	Lys	Ser	Leu	Pro	Ser	Leu
	2435						2440						2445		

Pro	Thr	Ser	Pro	Thr	His	Ile	Gln	Ala	Met	Arg	His	Ala	Thr	Gln	Gln	2450	2455	2460
Lys	Gln	Phe	Gly	Gly	Ser	Asn	Leu	Asn	Ser	Leu	Leu	Gly	Gly	Ala	Asn	2465	2470	2475
Gly	Gly	Gly	Val	Val	Gly	Gly	Gly	Gly	Gly	Gly	Gly	Gly	Gly	Val	Gly	2485	2490	2495
Gln	Gly	Pro	Gln	Asn	Ser	Pro	Val	Ser	Leu	Gly	Ile	Ile	Ser	Pro	Thr	2500	2505	2510
Gly	Ser	Asp	Met	Gly	Ile	Met	Leu	Ala	Pro	Pro	Gln	Ser	Ser	Lys	Asn	2515	2520	2525
Ser	Ala	Ile	Met	Gln	Thr	Ile	Ser	Pro	Gln	Gln	Gln	Gln	Gln	Gln	Gln	2530	2535	2540
Gln	Gln	Gln	Gln	Gln	Gln	His	Gln	Gln	Gln	Gln	Gln	Gln	Gln	Gln	Gln	2545	2550	2555
Gln	Gln	Gln	Gln	Gln	Gln	Gln	Gln	Gln	Leu	Gly	Gly	Leu	Glu	Phe	Gly	2565	2570	2575
Ala	Gly	Leu	Asp	Leu	Asn	Gly	Phe	Cys	Gly	Ser	Pro	Asp	Ser	Phe	His	2580	2585	2590
Ser	Gly	Gln	Met	Asn	Pro	Pro	Ser	Ile	Gln	Ser	Ser	Met	Ser	Gly	Ser	2595	2600	2605
Ser	Pro	Ser	Thr	Asn	Met	Leu	Ser	Pro	Ser	Ser	Gln	His	Asn	Gln	Gln	2610	2615	2620
Ala	Phe	Tyr	Gln	Tyr	Leu	Thr	Pro	Ser	Ser	Gln	His	Ser	Gly	Gly	His	2625	2630	2635
Thr	Pro	Gln	His	Leu	Val	Gln	Thr	Leu	Asp	Ser	Tyr	Pro	Thr	Pro	Ser	2645	2650	2655
Pro	Glu	Ser	Pro	Gly	His	Trp	Ser	Ser	Ser	Ser	Pro	Arg	Ser	Asn	Ser	2660	2665	2670
Asp	Trp	Ser	Glu	Gly	Val	Gln	Ser	Pro	Ala	Ala	Asn	Asn	Leu	Tyr	Ile	2675	2680	2685
Ser	Gly	Gly	His	Gln	Ala	Asn	Lys	Gly	Ser	Glu	Ala	Ile	Tyr	Ile		2690	2695	2700